

REMARKS

Applicant respectfully requests reconsideration and allowance in view of the foregoing amendments and following remarks. By this response, claims 43, 46, 49, 51, 53 and 58 have been amended to further clarify the invention. After entry of this response, claims 43-54 and 58 will be pending in the application.

Non-Responsive Communication

In the Office Action, the Examiner commented that the communication filed by Applicant on April 11, 2003 was non-responsive to the immediately Prior Office Action (i.e., the Office Action mailed on January 3, 2003) because Applicant alleged failed to specifically point out how the language of claims 44-45, 47-48, 50-54 and 58 patentably distinguishes them from the applied reference(s). Applicant respectfully requests withdrawal of this contention of non-responsiveness.

The Examiner noted in the Office Action that the last sentence of the section numbered 3 in the immediately Prior Office Action was intended to address claims 44-45, 47-48, 50-54 and 58. However, based on ALL of the language of that section, which is only one paragraph in length, Applicant asserts that the last sentence was directed only to the claims enumerated in the first sentence of that section. No other interpretation could be drawn from the paragraph. Specifically, the one paragraph of the section numbered 3 is rewritten below:

3. Claims 43-54 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teaching of Frankl (4,592,275) and Fontein (2,916,142).

The claims 43, 46 and 49 essentially differ from Fankl by specifying two, or a range or opening diameters. Frankl discloses the use of an inclined screen to process animal waste which employs a spray bar 60. The use of such screens to process animal waste is very well known in the art, and the device disclosed by Frankl is merely exemplary [sic]. Frankl does not appear to expressly disclose varied opening diameters. Fontein discloses an inclined screen for wet screening of liquid suspensions (col. 1, lines 15-20). Claim 11 of Fontein recites a "means for varying the width of said separate fraction," while claim 12 specifies means for controlling the air (also see col. 11, lines 25-35). It would have been obvious to one of ordinary skill in the art to employ the device of Fontein to filter manure in order to separate various sized fractions; i.e., separate "useful feed values"

from non-useful feed values. Absent a showing of unexpected results or criticality specifically associated with the various [sic] flowrates [sic] and dimension, they are submitted to be parameters that would have been routinely optimized by one of ordinary skill in the art.

From the foregoing, in the context of the entire section, it is apparent that the paragraph is specifically addressing claims 43, 46 and 49, and makes no mention of claims 44-45, 47-48, 50-54 and 58 in the section. Further, an inspection of Applicant's response to the immediately Prior Office Action will demonstrate that Applicant addressed each and every claim to which the Examiner alleges Applicant's response was non-responsive. Therefore, because the Examiner did not specifically address claims 44-45, 47-48, 50-54 and 58, and because Applicant did, nevertheless, specifically address claims 44-45, 47-48, 50-54 and 58, Applicant respectfully requests withdrawal of the contention of non-responsiveness.

However, in an attempt to circumvent future rejections, Applicant has amended the remarks initially presented in the immediately Prior Office Action, which are included as the remainder of this amendment. Specifically, Applicant has included a Rule 132 Declaration (with Exhibits), and citations to the Declaration, to better demonstrate the tremendous improvement of the claimed invention over the state of the art at the time of Applicant's invention.

Immediately Prior Office Action

In the immediately Prior Office Action, mailed January 3, 2003, the Examiner objected to the drawings, and objected to and rejected claims 43-54 and 58. Applicant respectfully traverses the rejections.

Drawing Objections

In the immediately Prior Office Action, the Examiner objected to the drawings under 37 C.F.R. §1.83(a) for allegedly not showing a specific feature in the claims, namely, the **varying pore size** feature. Applicant has submitted amended drawings and proposed corresponding specification amendments to address the Examiner's objection.

Therefore, for at least these reasons, Applicant respectfully requests entry of the amended drawings, entry of the specification amendments, and withdrawal of the drawing objection.

Claim Objections

In the immediately Prior Office Action, the Examiner objected to claims 43-54 and 58 because of certain informalities. Specifically, the Examiner correctly noted that in numerous instances, the claims recite a “**slopped**” screen instead of a “**sloped**” screen. Applicant has amended the claims to correct this informality. Applicant has further amended the specification to correct this same informality.

Therefore, for at least these reasons, Applicant respectfully requests entry of these amendments and withdrawal of the claim objections.

Claim Rejections under 35 U.S.C. §103(a)

In the immediately Prior Office Action, the Examiner allegedly rejected claims 43-54 and 58 under 35 U.S.C. §103(a) as being unpatentable over the combined teachings of U.S. Patent No. 4,592,275 to Frankl (hereinafter “Frankl”) and U.S. Patent No. 2,916,142 to Fontein (hereinafter “Fontein”). Applicant respectfully traverses the rejections of claims 43-54 and 58 and reminds the Examiner of the following standards for a proper §103(a) rejection.

A §103(a), or obviousness, rejection is proper only when “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time of the invention was made to a person having ordinary skill in the art to which the subject matter pertains.” 35 U.S.C. §103(a). The Examiner must make out a *prima facie* case for obviousness. The *en banc* Federal Circuit has held that “structural similarity between claimed and prior art subject matter, proved by combining references or otherwise, where the prior art gives reason or motivation to make the claimed compositions, creates a *prima facie* case of obviousness.” *In re Dillon*, 16 U.S.P.Q. 2d 1897, 1901 (CAFC 1990). The mere fact that references can be combined or modified, without a motivation to do so, is not sufficient to establish *prima facie* obviousness. The underlying inquiries into the validity of an obvious rejection are: “(1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness.” *In re Dembiczak*, 175 F.3d 994, 998, (Fed. Cir. 1999).

Further, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Likewise, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984).

Independent Claims 43, 46 and 49

For the reasons stated below and taking into consideration the standards for obviousness presented above, Applicant asserts that one of ordinary skill in the art would not have considered Applicant's invention obvious at the time of invention and, therefore, that Applicant's rejected claims 43, 46 and 49 are not obvious over the prior art of record.

In both Frankl and Fontein, the separating apparatus consists of elongated slots made by connecting rods or bars at each end that are spaced to create the desired screening width. Note that in these two references, the term "screen" is used generically to illustrate the screening function of the apparatus and not literally to disclose a screen as in the present invention. In fact, per Fontein on col. 10, lines 62-63, "perforated plates ... have been found too thin" for screening purposes. Further, because the rods or bars used in the references are parallel to one another, the slot created between them are of a uniform width and continuous across the width of the device.

In contrast, the present invention discloses a screen to perform the screening function, not rods or bars, and the perforations in Applicant's screen are of a varying width. This varying width optimizes the effectiveness of the invention and would have been impossible to perform using rod and bar created slots, as in the cited references.

Also, in Frankl, the apparatus is designed to be flat so that a sheet can lie over the entire length of the filter bed (see Frankl, col. 4, lines 63-68). The function of the sheet on the filter bed is to make the Frankl device effective, by adding pressure on top of the manure slurry in the liquid separation process. Combining a curved, or sloped, screen to the Frankl device would make the Frankl device unusable for its intended purpose. If the Frankl filter bed were sloped, in a concave manner, away from the sheet, then the sheet would not lie flat on the filter bed (as intended by Frankl) and the inventive effectiveness of the Frankl device would be lost.

In contrast, the present invention discloses a sloped or curved screen, unlike the required flat screen of Frankl. Further, Applicant's invention does not need the extra sheet function as required by the Frankl device to operate effectively.

Additionally, the fact that Applicant's invention is substantially more effective at removing solids from the manure slurry and, thus, at not removing nutrients, supports the conclusion that Applicant's invention is non-obvious over the art of record. Specifically, in Applicant's Specification on page 15 at lines 20-28, Applicant points out that

experimental results taken from twice-screened slurry 1044 indicate that the use of separators 1012 and 1022 removes 90% and more of the solids from slurry 1040. This is in stark contrast to the 16% of the solids that are removed by prior-art separator 100. One benefit of this dramatic increase in the percentage of removed solids is that the useful life of the lagoons is significantly extended.

Another benefit is that if slurry 1040 is processed within a few hours after being collected, the amount of nutrients and salts that are loaded into twice-screened slurry 1044 is significantly reduced.

To further bolster this factual assertion from the specification, Applicant has filed herewith a Declaration with two Exhibits. Exhibit A of the Declaration shows the actual experimental data and results from the U.S. Department of Agriculture that verify the dramatic improvement of Applicant's invention. Further, Exhibit B of the Declaration shows that even as late as the end of 2002, more than a year and a half after Applicant's filing date, the state of the art manure slurry separator only achieves about 60% solids separation from a manure slurry. Exhibit A also shows the dramatic improvement in nutrient capture in the solids for subsequent use as a fertilizer. Finally, the Inventor-Declarant again verifies the reduced frequency with which he must have his lagoons pumped (i.e., maintained at a large expense) by virtue of using the claimed invention.

In view of the above remarks, Applicant requests the withdrawal and reconsideration of the claim rejections for claims 43, 46 and 49. For at least these reasons, Applicant respectfully submits that independent claims 43, 46 and 49 are in a condition for allowance, and respectfully request such a Notice to that effect.

Dependent Claims 44-45, 47-48 and 50

Applicant asserts that the Examiner has failed to make out the requisite *prima facie* case for obviousness. Nowhere in the immediately Prior Office Action does the Examiner specifically provide support for rejecting claims 44-45, 47-48 and 50. Each additional element of these dependent claims is not shown to exist in, or be suggested by, any of the cited references. Further, no motivation to combine references containing the elements of these claims is mentioned. Therefore, the rejection to these claims should be withdrawn.

Assuming, *arguendo*, that a *prima facie* case for obviousness can be implied for these dependent claims from the Examiner's detailed rejections of the independent claims from which they depend, or from the subsequently mailed Notice of Non-Response Communication, Applicant asserts that the dependent claims 44-45, 47-48 and 50 are nevertheless patentable over the art of record.

Dependent claims 44-45, 47-48 and 50 ultimately depend from independent claims 43, 46 and 49, respectively. The allowability of dependent claims 44-45, 47-48 and 50 thus follows from the allowability of independent claims 43, 46 and 49, respectively, as presented in detail above; as such, dependent claims 44-45, 47-48 and 50 are allowable over the art of record.

As further evidence that dependent claims 44-45, 47-48 and 50 are non-obvious over the prior art, the specification teaches that the present invention improves the solids-removing efficiency in the art from about 16% to 90% or more. (Applicant's Specification, page 15, lines 20-23). As also taught in the specification, this improved solids-removing efficiency extends the useful life of the waste lagoons. (Applicant's Specification, page 15, lines 23-25) and improves the nitrogen levels of the removed solids for use a fertilizer (Applicant's Specification, page 15, lines 26-28).

Additional evidence of the dramatic improvements of the present invention are provided in a Rule 132 Declaration of Inventor, Richard Dias, along with two exhibits, A and B, to the Declaration that are submitted herewith. The Inventor declares factual information to support the patentability of the present invention, specifically regarding the dramatically improved solid-removing efficiency of the claimed invention and the real benefits of this improved efficiency,

namely, the reduced frequency of waste lagoon pumping and improved nutrient levels in the removed solids.

One of the included exhibits, Exhibit B, is an article demonstrating that even as of late 2002, the state-of-the-art manure slurry screen separators only attain close to 60% solids-removing efficiency. Again, the present invention, at least by the filing date of March 30, 2001, could attain a 90% or more solids-removing efficiency after two screenings.

The second included exhibit, Exhibit A, illustrates the dramatic improvements of the present invention as measured and analyzed independently by Dr. Brion Duffy from the U.S. Department of Agriculture. Dr. Duffy's calculations demonstrate that the claimed invention improves the solids-removing efficiency to over 80% after the first screening the a dual-screening process, and to well over 90% after the second screening. Further, Dr. Duffy's measurements illustrate the improved Nitrogen content in the removed solids.

In view of the above remarks, Applicant requests the withdrawal and reconsideration of the claim rejections for claims 44-45, 47-48 and 50. For at least these reasons, Applicant respectfully submits that independent claims 44-45, 47-48 and 50 are in a condition for allowance, and respectfully request such a Notice to that effect.

Claims 51-54 and 58

Of claims 51-54 and 58, three are independent claims, claims 51, 53 and 58, with claims 52 and 54 being dependent claims.

Applicant asserts that the Examiner has failed to make out the requisite *prima facie* case for obviousness. Nowhere in the immediately Prior Office Action does the Examiner specifically provide support for rejecting claims 51-54 and 58. In fact, beside mentioning these claims in the 103(a) rejection section header, the immediately Prior Office Action fails to discuss these claims at all. Each element of these claims is not shown to exist in, or be suggested by, any cited reference. Further, no motivation to combine references containing the elements of these claims is mentioned. Therefore, the rejection to these claims should be withdrawn.

Notwithstanding this failure to make out the requisite *prima facie* case for obviousness, Applicant asserts that claims 51-54 and 58 are nevertheless patentable over the art of record for at least each of the reasons presented above in relation to claims 43-50.

Specifically, s further evidence that dependent claims 51-54 and 58 are non-obvious over the prior art, the specification teaches that the present invention improves the solids-removing efficiency in the art from about 16% to 90% or more. (Applicant's Specification, page 15, lines 20-23). As also taught in the specification, this improved solids-removing efficiency extends the useful life of the waste lagoons. (Applicant's Specification, page 15, lines 23-25) and improves the nitrogen levels of the removed solids for use a fertilizer (Applicant's Specification, page 15, lines 26-28).

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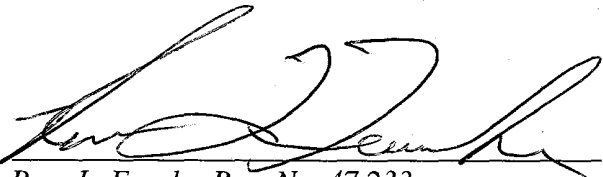
In view of the above remarks, Applicant requests the withdrawal and reconsideration of the claim rejections for claims 51-54 and 58. For at least these reasons, Applicant respectfully

submits that independent claims 51-54 and 58 are in a condition for allowance, and respectfully request such a Notice to that effect.

Conclusion

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition of allowance and a Notice to that effect is earnestly solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,
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